Exhibit A
Performance Measures and Liquidated Damages

1. General.

1.1 This exhibit describes how the Performance Measures will be evaluated and how liquidated damages will be assessed based on the evaluation results. The functional requirements are contained in Appendix 4 of the RFP.

1.2 The requirements set forth herein describe the performance requirements for the Electronic Tolling System (TCS) for the SR 520 Bridge. These requirements will be used as a baseline from which the Vendor will measure the TCS. Generally all Performance Measures are applicable following Tolling Commencement unless defined otherwise.

1.3 Abbreviations and Definitions

All capitalized terms and abbreviations used in this Exhibit A, but not expressly defined herein, have the respective meanings set forth in Appendix 1 – Definitions of the RFP.

1.4 Table 2-1 Performance Measures and Liquidated Damages

1.4.1 The Performance Measures listed in Table 2-1: Performance Measures and Liquidated Damages include the following columns:

- ID – Performance Measure requirement number
- Appendix number – the Appendix in the RFP to which the related functional requirements can be referenced
- Section – section number in the RFP Appendices of related functional requirement
- Title and Functional area – description of the related functional area
- Performance Measure – defined System Performance Measure
- Reporting frequency / document – how often the measure is reported
- Minimum quantity – minimum period of time which may be calculated or used for Performance Measure and the minimum quantity of vehicles or data set which should be used in the performance calculation
- Measurement method – the method with which the information is automatically or manually calculated and delivered to WSDOT; the document the performance calculation is included in
- Liquidated damages – the method and amount the associated damaged are calculated and assessed

- Additional notes – any additional relevant notes necessary to interpret, measure, and report on the Performance Measure

1.4.2 The abbreviations used in Table 2-1: Performance Measures and Liquidated Damages, their meanings, and the Sections of which each abbreviation references are as follows:

- MR – Monthly Report (See Section 2.2.1 in Appendix 3 of the RFP)
- PAR – Performance Audit Report (See Section 2.2.3 in Appendix 3 of the RFP)
- MTP – Master Test Plan (See Section 5.1 in Appendix 3 of the RFP)

2. Performance Measures and Liquidated Damages

Table 2-1 – Performance Measures and Liquidated Damages

ID	Appendix	Section / Requirement	Title and Functional area	Performance measure	Reporting frequency - document	Minimum quantity	Measurement method	Damage calculation	Additional notes
1	4	3.2.2.2 / SR520-4.15	Transaction Creation (Lane Controller)	The Lane Controller shall correctly correlate 99.95% of all Transaction data into a single Transaction for each vehicle that passes through the Toll Zone.	Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR.	Annual: Non-payment of PAR and MR until corrected.	This takes the PR-2, PR-3, PR-4, PR-5, and PR-6 and ensures that the System will assemble this data properly into a single Toll Transaction for each vehicle. Conducted with Live Traffic.
2	4	3.2.3 / SR520-4.21	Vehicle Detection (AVC)	The AVC subsystem shall correctly detect 99.9% of all vehicles that pass through the Toll Zone	Ad-hoc – n/a	Ad-hoc: Randomly selected period (at least 1 hour) of Live Traffic during daylight hours.			WSDOT will gather TMC data and provide it to the Vendor to include within the MR; DVAS data shall only be used when quantity variance of the loop data versus the FMAS is greater than 5%. If that occurs, WSDOT will select one or more periods of actual traffic and the Vendor and/or will conduct ad-hoc analysis to estimate actual performance. Conducted with Live Traffic.
					Monthly – MR	Monthly: A full month of vehicle count data.	Monthly: Vendor shall supply monthly vehicle counts via FMAS, WSDOT shall supply TMC monthly vehicle counts, and Vendor will include a comparison of the data in the MR. In the event of a significant difference (±5% when using loop data), an ad-hoc analysis of the DVAS shall be used to estimate the actual performance to determine damages.	Monthly: The number of vehicles less than 99.9% that are not detected multiplied by the minimum toll that would have been collected during the affected period. Additionally, non-payment of MR. until corrected.	
					Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR.	Annual: Non-payment of PAR and MR until corrected.	
3	4	3.2.4 / SR520-4.24	Vehicle Classification (AVC)	The AVC subsystem shall correctly classify 99.8% of all vehicles that pass through the Toll Zone	Ad-hoc – n/a	Ad-hoc: Randomly selected period (at least 1 hour) of Live Traffic during daylight hours.	Annual: As defined in the approved MTP for the PAR.	Annual: Non-payment of PAR and MR until corrected.	Conducted with Live Traffic.
					Annually – PAR	Annual: As defined in the approved MTP for the PAR.			
4	4	3.2.5 / SR520-4.29	Transponder Write (AVI)	The AVI subsystem shall correctly write to 99.9% of all Transponders that pass through the Toll Zone	Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR.	Annual: Non-payment of PAR and MR until corrected.	Conducted with Test Vehicles and/or Live Traffic.
5	4	3.2.5 / SR520-4.29	Transponder Reads (AVI)	The AVI subsystem shall correctly read 99.9% of all Transponders that pass through the Toll Zone	Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR.	Annual: Non-payment of PAR and MR until corrected.	Conducted with Test Vehicles and/or Live Traffic.
6	4	3.2.6.1 / SR520-4.38	Image Capture	The Image Capture subsystem shall capture at least one human-readable front image and one human-	Ad-hoc – n/a	Ad-hoc: Randomly selected period (at least 1 hour) of Live Traffic.			WSDOT will gather CSC data and provide it to the Vendor to include within the MR.

				readable rear image of the license plates per vehicle for 99% of all vehicles that pass through the Toll Zone, regardless of weather conditions (i.e., lighting, sun glare, etc.) or vehicle positioning (i.e., location, speed, or headway).	Monthly – MR	Monthly: A full month of vehicle count data.	Monthly: Use CSC reporting tools to check image review and code-off results.	Monthly: The number of vehicles less than 99% that are not human readable multiplied by the minimum toll that would have been collected during the affected period. Additionally, non-payment of MR. until corrected.	
					Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR	Annual: Non-payment of PAR and MR until corrected.	
7	4	3.2.6.2 / SR520-4.43	Optical Character Recognition	The Image Capture subsystem shall return correct OCR results for at least 90% of all human-readable license plate images	Ad-hoc – n/a	Ad-hoc: Randomly selected period (at least 1 hour) of Live Traffic.			WSDOT will gather CSC data and provide it to the Vendor to include within the MR.
					Monthly – MR	Monthly: A full month of vehicle count data.	Monthly: Use CSC reporting tools to check image review and code-off results.	Monthly: The incremental cost of image review labor multiplied by the number of vehicles less than 90% that do not have human readable license plates during the affected period. Additionally, non-payment of MR. until corrected.	
					Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR	Annual: Non-payment of PAR and MR until corrected.	
8	4	3.2.2.3 / SR520-4.18	Data Storage	The Lane System shall be capable of storing no less than 30 Calendar Days of Transponder, vehicle, and event data	Monthly – MR	Monthly: A full month of vehicle count data.	Monthly: Compare the date of the oldest stored data record to the date of the end of the reporting period.	Monthly: Non-payment of MR until corrected.	
					Annually – PAR	Annual: As defined in the approved MTP for the PAR.	Annual: As defined in the approved MTP for the PAR	Annual: Non-payment of PAR and MR until corrected.	
9	4	3.9.1 – 3.9.3 / SR520-5.50 – 5.52	Response and Repair Time	MTTRespond and MTTRepair shall be no greater than the allowable times in accordance with Table 3-1 in Appendix 5 for all maintenance performed on the System	Monthly – MR	Monthly: A full month of vehicle count data.	Monthly: Use MOMS data, for each Priority Level where the allowable mean response or repair time is not met. The number of maintenance events is multiplied by the quantity of hours exceeding the allowable mean response or repair time. See description in Section 3.	Monthly: The monthly maintenance fee divided by the hours in the month is then multiplied by the total quantity of hours exceeding the allowable mean response or repair time. See description in Section 3.	A summary of the monthly results shall be included in the PAR.
10	4	3.3.4.5 / SR520-4.125 -4.131	Availability	The System shall be considered available when at least one (1) device per lane from each of the five (5) subsystems replies to a ping sent by the Host at a configurable frequency.	Monthly – MR	Monthly: A full month of vehicle count data.	See description in Section 4.	See description in Section 4.	A summary of the monthly results shall be included in the PAR.

Note: Measurement shall start when either the Vendor identifies the discrepancy or when WSDOT notifies the Vendor of an actual discrepancy. The criteria for notification are described in Appendix 5, Section 3.7.

3. CALCULATION OF MEAN TIME TO RESPOND AND REPAIR

When MTTRespond and/or MTTRepair do not meet the requirements contained in Appendix 4, Section 3.3.5, Liquidated Damages of the RFP shall be calculated as follows:

- Mean Time to Respond (MTTRespond) is the average allowable time between problem discovery and the beginning of the work.
- Mean Time to Repair (MTTRepair) is the average allowable time between the start of work activities and problem resolution.

These two metrics are calculated in a very similar fashion. For every issue, both of these metrics shall be reported based on the Priority Level. Some issues may be considered priority 1 initially, however, after a workaround is established the same issue will be recorded a second time as a priority 3.

The Vendor will report an issue identification number, the response start time, response end time, repair start time, repair end time and the cumulative number of hours spent for each Priority Level for both response and repair time. The cumulative number of hours spent will then be compared to the cumulative number of allotted hours. Liquidated damages are only assessed if the hours spent exceed the allotment.

An hourly maintenance rate is established by dividing the Vendor's monthly maintenance fee by the number of hours in a month. The monthly cost is then multiplied by the total number of response and repair hours that exceed the allotment. This amount is accounted for on the monthly invoice. See Table 3-1 for an example calculation.

Table 3-1 – Example Calculation of MTTRespond and MTTRepair

Priority 1 Incident ID	Response Time			Repair Time		
	Response Time Start	Response Time End	Counted Response Time	Repair Time Start	Repair Time End	Repair Time
1	7:00 PM	8:00 PM	1.0	8:00 PM	10:00 PM	2.0
2	5:00 PM	6:00 PM	1.0	6:00 PM	10:00 PM	4.0
3	8:00 AM	9:00 AM	1.0	9:00 AM	1:00 PM	4.0
4	8:00 AM	9:00 AM	1.0	9:00 AM	2:00 PM	5.0
5	10:00 PM	5:00 AM	7.0	5:00 AM	5:30 AM	0.5
	Avg. Monthly Response Time:		2.2	Avg. Monthly Repair Time:		3.1
	Threshold:		2.0	Threshold:		2.0
	Avg. Hrs Exceeded (monthly)		0.2	Avg. Hrs Exceeded		1.1
	Number of Incidents		5	Number of Incidents		5
	Hours Exceeded		1.0	Hours Exceeded		5.5
	Maintenance Rate (hrs/mnth)		$56	Maintenance Rate (hrs/mnth)		$56
		Amt. Charged	**$56**		**Amt. Charged**	**$308**
				Priority 1 Subtotal		**$364**

4. CALCULATION OF AVAILABILITY

When Availability does not meet the requirements Appendix 4, Section 3.3.4.5, Liquidated Damages shall be calculated as follows:

The potential revenue from the period of failure shall be subtracted from the potential revenue from the previous period to determine the amount of missing revenue. The potential revenue from the period of failure shall be calculated as the sum of all Toll Transactions from the affected Toll Zone for the affected period. The potential revenue from the previous period shall be calculated as the average sum of all Toll Transactions for the previous four (4) weeks from the same time of day and the same day(s) of the week as the affected period.

The missing revenue shall be divided by the total number of outage hours to yield an hourly missing revenue average. The number of hours that exceed the Availability requirements in Appendix 4, Section 3.3.4.5 shall be multiplied by the hourly missing revenue average to arrive at the Liquidated Damage to be assessed. Table 4-1 contains an example calculation. If the potential revenue from the period of failure is greater than the potential revenue from the previous period, no Liquidated Damages are assessed.

Table 4-1 – Example Calculation of Availability and Liquidated Damages

Date	Incident Description & Location	Outage Time	Outage Length (hr)	Potential Revenue from Previous Period ($/hr/zone)	Potential Revenue from the Period of Failure ($/hr/zone)	Potential Lost Revenue Total
1/1/2009	AVI Failure in WB, Lane 1	1am - 3am	2.0	$2,000	$1,800	$400
1/2/2009	OCR Failure in EB, Lane 1	6am-11am	5.0	$3,500	$3,000	$2,500
1/3/2009	DVAS Failure in WB, Lane 2	11:13am-1:13pm	2.0	$2,000	$1,750	$500
1/4/2009	AVI Failure in WB, Lane 2	4pm-7pm	3.0	$5,000	$4,000	$3,000
1/5/2009	AVI Failure in WB, Lane 1	2:00pm-5:12pm	3.2	$4,000	$3,500	$1,600
		Total	15.2			$8,000
					Hourly Avg	$526.32

Sum of Hours Unavailable	15.2
Hours Allowed (99.0% of hours per month)	7.2
Hours Exceeding	8.0
Hourly Avg Rate	$526.32
Total Due	$4,210.53